

clerical nature. New Claim 21 was added based on the expression deleted from the 3<sup>rd</sup> from last line of Claim 1.

Rejection of claims under 35 U.S.C. 103

Claims 1-20 were rejected as unpatentable over Carlson (U.S. 4,411,776) in view of Mazgarov et al., (U.S. 5,683,574). However, neither one of these citations discloses the essential features of the invention presently described and claimed. Both references use a catalyst which differs in its essential nature from the one used in the present invention.

Carlson describes and claims a method using impregnating a catalyst on a fixed bed, wherein the catalyst is a metal phthalocyanine (Col. 3, line 13), or, usually, a sulfonated derivative such as cobalt phthalocyanine monosulfonate (Col. 3, lines 24-29).

Although Mazgarov et al., mentions a halogen substituted catalyst, it differs because (1) the rings are halogen-substituted and (2) they are sulfonated (see formula at Col. 3 and Col. 3, lines 12-13).

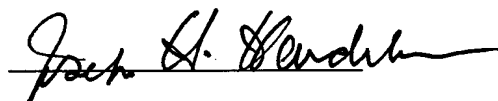
In the present invention the catalyst is a halogenated metal phthalocyanine. The description makes it clear that the highly sulfonated known catalysts have problems regarding adequate impregnation of the support and leaching from the support (see the present description, page 3, second paragraph). The important advantages resulting from the use of a different catalyst are explained e.g. on page 7 second paragraph and (a) to (e) on page 18 (see especially paragraph (b)).

Since neither citation shows the present catalyst, their combination cannot make the invention obvious. Moreover, the preference for sulfonated catalysts in the citations makes it clear that there is no suggestion to employ a catalyst as in the present invention.

The present description shows (see tables) the excellent results of the invention.

Therefore, early issuance of a Notice of Allowance is respectfully requested.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read "Joseph H. Handelman", written over a horizontal line.

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**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE SPECIFICATION:**

The last paragraph on page 5 was amended as follows:

- - In yet another embodiment of the present invention the halogenated metal phthalocyanine used is prepared as described and claimed in [our] co-pending U.S. Application [no. NF 260/98] No. 09/804,985, filed March 13, 2001.--

The last paragraph on page 18 (paragraph (e)) was amended as follows:

- - (e) In the present process regeneration of catalyst on the bed is easily done.- -

**IN THE CLAIMS**

Claims 1, 2, 5 to 9 and 13 to 20 were amended as follows:

1. (Amended)            A process for fixed bed sweetening of petroleum distillates using halogenated metal phthalocyanine as a catalyst which comprises: impregnating the catalyst on an activated charcoal bed by circulating an alcoholic alkaline solution of the catalyst through said activated charcoal bed [till] until a colourless solution is obtained in the effluent, thereby obtaining a catalyst impregnated charcoal bed, passing the petroleum distillate through [above] said catalyst [loaded] impregnated charcoal bed along with air or oxygen at a temperature in the range of 20°C to 100°C at a pressure in the range of 1 kg/cm<sup>2</sup> to 15kg/cm<sup>2</sup> with a liquid hourly space velocity in the range of 1hr<sup>-1</sup> to 15hr<sup>-1</sup> with continuous or intermittent injection of alkali solution [such as sodium hydroxide] of concentration in the

range of 0.5-20%, to obtain the desired low mercaptan level petroleum distillates.

2. (Amended) A [success] process as claimed in claim 1, wherein the alcoholic alkaline solution used is selected from methanolic and ethanolic solution of sodium hydroxide.

5. (Twice Amended) A process as claimed in claim 1, wherein the halogenated metal phthalocyanine used is prepared [as described and claimed in our co-pending application no. NF 260/98] by treating the metal phthalocyanine with a halogenating agent selected from the group comprising chlorine, bromine, iodine, thionyl chloride, sulphuryl chloride, phosphorus pentachloride, phosphorus oxychloride, phosphorus pentabromide and phosphorus trichloride.

6. (Twice Amended) A process as claimed in claim 1, wherein the petroleum [fraction] distillate used is selected from diesel, kerosene and FCC gasoline.

7. (Twice Amended) A process as claimed in claim 1, wherein the temperature is [preferably] about in the range of 20°C to 50°C.

8. (Twice Amended) A process as claimed in claim 1, wherein the pressure is [preferably] about in the range of 5kg/cm<sup>2</sup> - 8kg/cm<sup>2</sup>.

9. (Twice Amended) A process as claimed in claim 1, wherein the liquid hourly space velocity (LHSV) is [preferably] about in the range of 1hr<sup>-1</sup> to 6hr<sup>-1</sup>.

13. (Amended) A process as claimed in claim 2, wherein the halogenated metal phthalocyanine used is prepared [as described and claimed in our co-pending application no. NF 260/98] by treating the metal phthalocyanine with a halogenating agent selected from the group comprising chlorine, bromine, iodine, thionyl chloride, sulphuryl chloride, phosphorus pentachloride, phosphorus oxychloride, phosphorus pentabromide and phosphorus trichloride.

14. (Amended) A process as claimed in claim 3, wherein the halogenated metal phthalocyanine used is prepared [as described and claimed in our co-pending application no. NF 260/98] by treating the metal phthalocyanine with a halogenating agent selected from the group comprising chlorine, bromine, thionyl chloride, sulphuryl chloride, phosphorus pentachloride, phosphorus oxychloride, phosphorus pentabromide and phosphorus trichloride.

15. (Amended) A process as claimed in claim 4, wherein the halogenated metal phthalocyanine used is prepared [as described and claimed in our co-pending application no. NF 260/98] by treating the metal phthalocyanine with a halogenating agent selected from the group comprising chlorine, bromine, iodine, thionyl chloride, sulphuryl chloride, phosphorus pentachloride, phosphorus oxychloride, phosphorus pentabromide and phosphorus trichloride.

16. (Amended) A process as claimed in claim 2, wherein the petroleum [fraction] distillate used is selected from diesel, kerosene and FCC gasoline.

17. (Amended) A process as claimed in claim 2, wherein the petroleum

[fraction] distillate used is [selected from] diesel [kerosene and FCC gasoline].

18. (Amended) A process as claimed in claim 2, wherein the petroleum [fraction] distillate used is [selected from diesel, kerosene and] FCC gasoline.

19. (Amended) A process as claimed in claim 3, wherein the petroleum [fraction] distillate used is selected from diesel, kerosene and FCC gasoline.

20. (Amended) A process as claimed in claim 4, wherein the petroleum [fraction] distillate used is selected from diesel, kerosene and FCC gasoline.

New Claim 21 was added as follows:

- - 21. (New) A process according to claim 1, wherein said injected alkali solution comprises sodium hydroxide.- -